Oxygen Uptake Rhythm in Penaeid Prawn *Penaeus indicus* (H. Milne Edwards) in Different Salinities

B JANAKIRAM, Y VENKATESWARLU, G RAJARAMI REDDY & K SASIRA BABU

Department of Marine Zoology, S V University, P G Centre, Kavali 524202

Received 28 March 1985; revised received 14 August 1985

Oxygen uptake was studied in brakishwater *P. indicus* at 1 h interval during 24 h (12 L : 12 D) solar day in 30, 25, 20, 15 and 10 × 10^{-3} salinities. Prawns exposed to 20 × 10^{-3} sal. exhibited oxygen uptake rhythm with peak and nadir values at 1800 hrs and 0500 hrs respectively. Average oxygen consumption was maximum in 20 × 10^{-3} sal. than in other salinities. Negative phase shifts (-Δφ) were observed in 20, 25 and 30 × 10^{-3} sal. whereas positive phase shifts (+Δφ) were observed in 15 and 10 × 10^{-3} sal.

Fig. 1—Oxygen uptake rhythm of *P. indicus* in different salinities. [Phase shifts (Δφ) in peak activity represented through dotted lines while shifts in nadir represented by ♦ mark. ■■■ Dark hours of day and --- light hours of day]
of delayed type ($-\Delta \varphi$). Persistence of oxygen uptake rhythm in different salinities with phase shifts of shorter duration indicated physiological adaptation of the animal to altered salinity stress. Occurrence of phase shifts of both advanced and delayed type from oxygen uptake rhythm indicated disturbances of osmotic changes experienced due to salinity variations in the medium.

The authors thank CSIR and UGC, New Delhi for financial assistance.

References